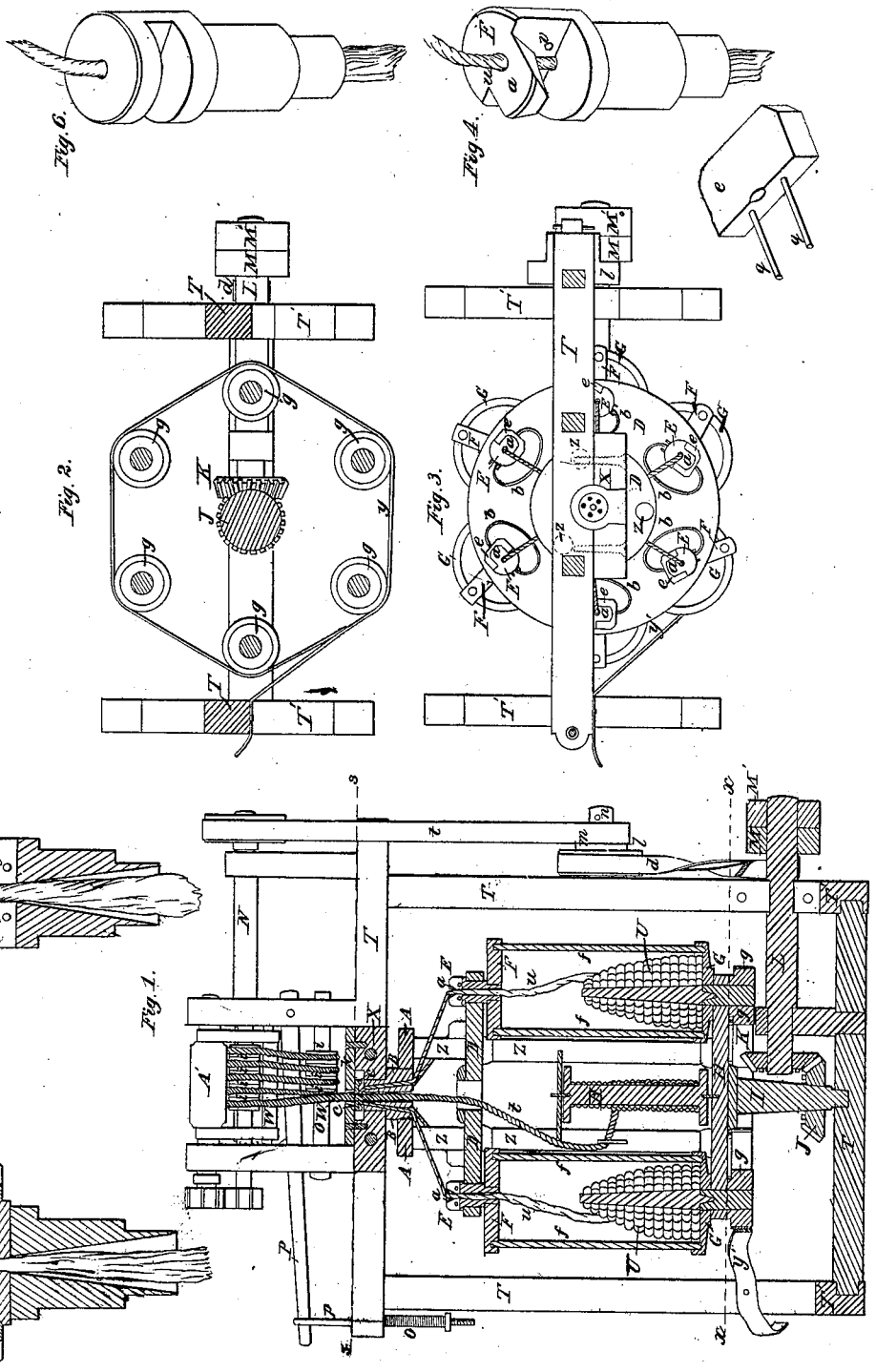
F. SLAUGHTER & D. PERRY.

ROPE MACHINE.

No. 6,992. Patented Jan. 1, 1850.



UNITED STATES PATENT OFFICE.

FRANKLIN SLAUGHTER AND DAVID PERRY, OF FREDERICKSBURG, VIRGINIA.

MACHINERY FOR MAKING COTTON CORDAGE.

Specification of Letters Patent No. 6,992, dated January 1, 1850.

To all whom it may concern:

Be it known that we, FRANKLIN SLAUGHTER and DAVID PERRY, of Fredericksburg, in the county of Spottsylvania and State of Virginia, have invented a new and Improved Machine for Manufacturing Cotton Cordage at One Operation Directly from Slivers; and we do hereby declare the following to be a full and exact description of the respective parts thereof that distinguish it from all other things before known, reference being had to the accompanying drawings, making a part of this specification.

Figure 1, is a vertical section through the center of our improved cordage making machine; Fig. 2, a horizontal section in the line *x*, *x*, of Fig. 1; Fig. 3, a horizontal section in the line *s*, *s*, of Fig. 1, and Fig. 4, a perspective view of parts of the machine detached.

Similar letters indicate like parts in all the figures.

The frame work T, T′, for supporting the respective movements of our improved cordage machine, may be constructed as represented in the drawings, or in any known or usual manner.

The circular plates A, D, H, connected to each other by the three vertical shafts Z, Z, Z, constitute a rotating frame in which are placed the flyers F, G, *f*, *f*, that receive the cops U (or cans) of sliver as it comes from the carding machine.

The rotating frame above mentioned, is supported and operated in the following manner: A journal shaft I, descends from the lower side of the plate H, and fits into a suitable bearing in the sill of the supporting frame; on which journal shaft (I,) is placed a bevel wheel J, that gears into the driving bevel wheel K, on the main shaft L. A neck B, rises from the head A, and forms the upper journal of the rotating frame; which neck is held in its place between the bearing block X, and the upper cross piece T, of the supporting frame. The series of flyers F, G, *f*, *f*, have journals descending from their lower disks G, through the plate H, of the rotating frame; on which journals, the pulleys *g*, *g*, are placed below the plate H. The upper journals of the flyers are formed by the necks of the nipper heads E, E, which descend through the plate D, of the main rotating frame, and are secured in the heads F, of the flyers.

The flyers are rotated around their own axes by means of the endless band Y, which embraces the series of pulleys *g*, *g*, and is kept in a stationary position by the flap Y′, extending therefrom and made fast to the side of the supporting frame; when the frame A, D, H, is rotated, the band Y, remaining in a stationary position and acting on the pulleys *g*, *g*, will impart a rotary motion to the flyers around their own axes, in consequence of their annular motion around the axis of the main rotating frame A, D, H.

The slivers *u* pass from the cops U, up through holes in the center of the nipper heads of the flyers, and thence to the series of holes formed in the neck B, of the main rotating frame,—as represented in Fig. 1; the twist is put into the slivers between the nipper heads and the neck B, of the main rotating frame; and the series of twisted strands thus formed, are all united and laid together into the cord W, in the space between the top of the neck B, and the under side of the compressing forming block C; and thence is drawn upward by the shaft N, as represented in Fig. 1, of the drawings. The compressing forming block C, is of a circular form and is placed in a recess above the top of the neck B, (shown in Figs. 1 and 3), and is retained in its place by the cap K, secured to the top of the bearing block X. A concavity is formed in the under side of C, and the hole leading therefrom, for the passage of the cord, is of a conical shape, and of such a size as to closely compress the cord during its passage through the same.

Our improved form of nipper *e*, and of the nipper E, are represented of a full size by Fig. 4. The nipper plays freely into a recess formed in the side of the head E, of the shape and depth represented in the drawing; and is pressed inward against the sliver *u*; by a spring *b*, as represented in Fig. 3. The portion *a*, of the head (E,) above the recess that receives the nipper, is beveled off at its sides, commencing at the edge of the hole through which the sliver passes (as shown in Fig. 7) and thereby gives but a small amount of bearing surface upon the upper side of the nipper.

The object of giving the nipper head this form, is to prevent the accumulation of broken cotton seeds and other trashy matter that is removed from the sliver during its passage through the nipper head, from accumulating about the nipper and preventing its free action against the silver.

It is found in practice, that in a nipper head of this, our improved form, the nipper will work perfectly for any length of time without clogging, even when the sliver is made of the commonest waste cotton. Whereas, by the use of the form of nipper heads represented by Figs. 5 and 6, we find by experience, that the nippers will become clogged and cease to press upon the sliver, in the course of one or two hours' time, requiring the machine to be stopped for removing the obstructions from about the nippers.

Steadying pins *q*, *q*, project from the inner edge of the nippers, into holes *v*, in the heads (E)—as shown in Fig. 4—for keeping the nippers in proper position and at the same time allowing them to play freely out and in by preventing the necessity of any contact between the upper and lower surfaces of the nippers and the top and bottom of the recesses in the heads (E,) in which they are placed. In forming cords or ropes directly from the sliver we find that there is frequently a very considerable inequality in the size of the strands; and therefore to prevent this unequal size of the strands from giving an irregular shape to the cord or rope we have placed the independent compressing forming block *c*, above the neck B, of the rotating frame, and made the conical hole therein of such a size as to condense the cord or rope into a perfectly round and smooth form. We find that by bringing the series of strand holes in the neck B, into a central hole for the cord or rope to pass out at, that when the central hole in B, is large, the cord or rope laid therein is very imperfect in its form; and when this hole is so small as to sufficiently compress the cord, the cord is turned thereby; which turning motion, prevents the laying up of the strands and destroys them by over twisting.

Motion is imparted to the drawing shaft N, from the driving shaft L, through the medium of the band *d*, the intermediate pulleys *l*, *m*, and the band *t*, as represented in Fig. 1, or, by any other method that may be deemed preferable.

The independent forming block *c*, being of a circular form, and placed in a recess of ample size, (as shown in Figs. 1 and 3,) is perfectly independent of the movements of the machine, and adapts itself freely to the motion of the rope. Should the said forming block *c*, be so secured as to be permanent and immovable in its position, the rope would be greatly injured, and sometimes twisted off, by the tortion and strain that is exerted between the neck B, and the forming block, when there is an inequality in the size of the strands, and a consequent inequality in the amount of draft exerted upon the same.

Having thus fully described our improved machine for making cords or ropes directly from cotton or other slivers, what we claim therein as our invention and desire to secure by Letters Patent, is—

1. The improved form of the nipper heads E, (shown in Figs. 4 and 7) when the nippers (*e*) are combined therewith by means of the steadying pins *q*, *q*, projecting from the inner edge of the nippers into guiding holes *v*, in the nipper heads, and by suitable actuating springs *b*, *b*, or their equivalents, substantially as represented and described; by means of which the nippers are prevented from becoming clogged and obstructed in their movements, and from pressing against the slivers, by the accumulation of trashy matter about them.

2. In combination with the planetary motion of the series of flyers that receive and twist the cotton slivers and lay the threads formed thereby into a cord or rope as described, the independently moving and self adjusting compressing forming block *c*, for giving a round and perfect form to the cord or rope (after its component threads have been laid together) substantially in the manner herein set forth.

The above specification signed and witnessed this 31st day of August 1849.

F. SLAUGHTER.
DAVID PERRY.

Witnesses:
Z. C. ROBBINS,
H. W. G. CLEMENTS.